

Work Order ID 148275

Tuesday, June 28, 2016 8:59:56 AM

046.3014
B148275
REV. N/C***148275***

Page 1

Item ID: 646.3014

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Blade

Start Date: 6/6/2016

Start Qty: 600

6

Cust Item ID:

Required Date: 6/27/2016

Req'd Qty: 600

6

Customer:

Reference:

DAS

Approvals:

Process Plan: 21

Date: JUL 04 2016

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

646.3000

N/C

100

0.00

100

BAND SAW

Bandsaw

Memo

0.06

Jeaspa Bandsaw

Cut Blank at 2.670"

DAS
33
9-89

110

0.16

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.28

HAAS CNC vertical machine #1

1-Machine per folio FB150

DWG REV: N/C

FOLIO REV: N/C

DAS
44
9-89

2- deburr and break all sharp edges except otherwise noted

KNIFE EDGE MUST BE SHARPENED USING STONE, REMOVE ALL
BURRS ON CUTTING EDGE

0308

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Work Order ID 148275

Tuesday, June 28, 2016 8:59:56 AM

148275

Page 2

Item ID: 646.3014

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Blade

Start Date: 6/6/2016 Start Qty: 6.00

6

Cust Item ID:

Required Date: 6/27/2016 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS
120						12	0		44
QC	Memo	0.02							9-89 16-07-17
Quality Control									
130	QC8- Inspect parts - second check	0.00							DAS
130						12	0		08
QC	Memo	0.02							9-89
Quality Control									
140	Outsource process - Heat Treat	0.00							
140									
Outsource1	Memo	48.00							
Outsource process - Heat Treat	HEAT TREAT AS PER DWG, SEE NOTE #3								
	ISSUE P/O: 33120								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
Root Cause				FAULT CATEGORY					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
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Page 3

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Item Name: Blade

Start Date: 6/6/2016 Start Qty: 6.00

6

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Required Date: 6/27/2016 Req'd Qty: 6.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.02							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.02							
Quality Control									
160	Spray Painting per QSI005 4.2	0.00							
160									
SprayPaint	Memo	0.03							
Spray Painting	PRIME AS PER DWG, SEE NOTE #4								
	PRIMER BATCH: <u>134587</u>								

12x 8016-8-3

① 1608-04 DAS 9 9-89

12 DAS 41 9-89 16-8-8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY																																																											
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
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Setup Start

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Customer:

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Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

QC14- Inspect Spray Paint

0.00

170

QC

Memo

0.02

Quality Control

DAS

38

9-89

AUG 10 2016

180

Identify as per dwg & Stock Location

0.00

180

Packaging

Memo

0.01

Packaging

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

AUG 10 2016

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.01

Quality Control

DAS

21

9-89

AUG 16 2016

DAS

21

9-89

AUG 16 2016

Picklist Print

Tuesday, June 28, 2016 8:59:56 AM

Page 1

Work Order ID: 148275

148275

Parent Item: 646.3014

646 3014

Parent Item Name: Blade

Start Date: 6/6/2016

Required Date: 6/27/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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MSTEEL-A2-
B0.500X1.250

Purchased

No

100

f

66.1880

0.223

~~1.408421~~

267

MSTFFI -A2-B0 500X1 250

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

DAS
33
9-89

16/07/15

Location

Loc Qty

Loc Code

MAT

36

M134172

36

MAT010

30.188

M126438

5.452

M127494

0.22

M131783

12.516

M133923

12

2,74'

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

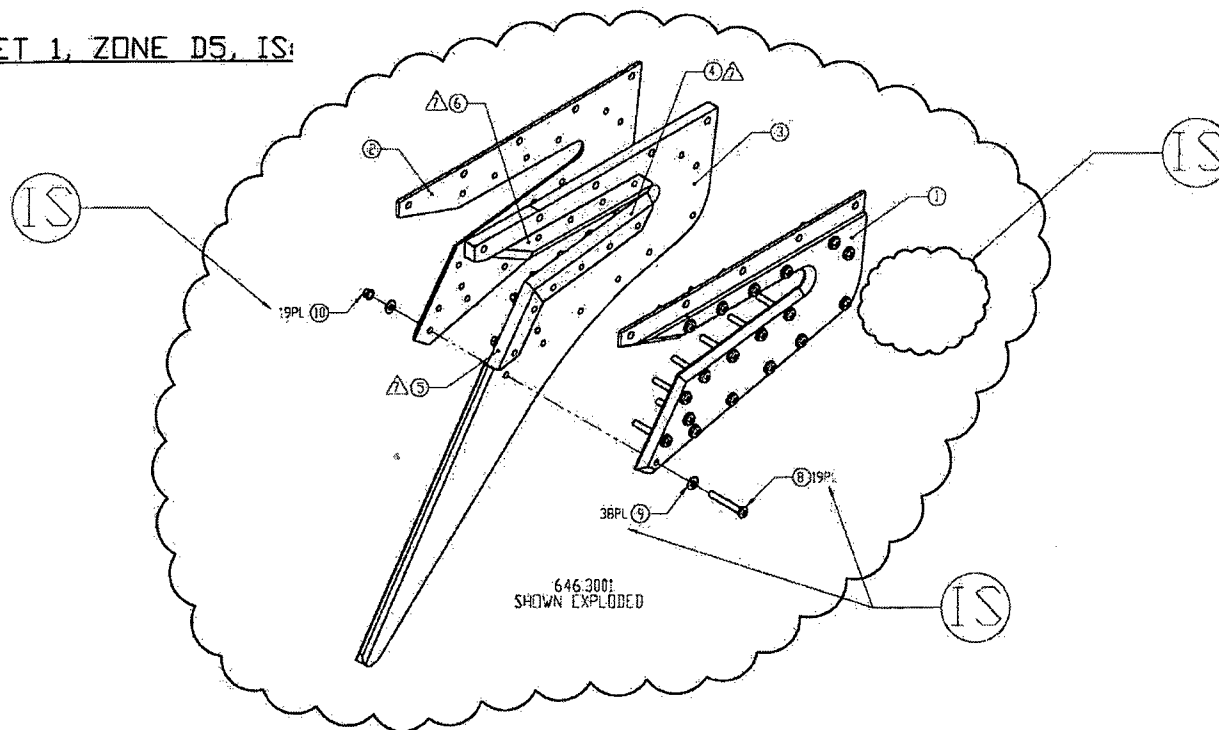
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Root Cause <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Environment ☐</td> <td style="border: none;">No Re-verification ☐</td> </tr> <tr> <td style="border: none;">Design ☐</td> <td style="border: none;">Operator ☐</td> </tr> <tr> <td style="border: none;">Doc/Data ☐</td> <td style="border: none;">Offset/Setup ☐</td> </tr> <tr> <td style="border: none;">Equip/Tooling ☐</td> <td style="border: none;">Supplier ☐</td> </tr> <tr> <td style="border: none;">Handling/Pre ☐</td> <td style="border: none;">Training ☐</td> </tr> <tr> <td style="border: none;">Material ☐</td> <td style="border: none;">Use for Testing ☐</td> </tr> <tr> <td style="border: none;">Internal Transport ☐</td> <td style="border: none;">Poor Information ☐</td> </tr> <tr> <td style="border: none;">Tribal Knowledge ☐</td> <td style="border: none;">Rushing ☐</td> </tr> <tr> <td style="border: none;">LOA ☐</td> <td style="border: none;">Product Improvement ☐</td> </tr> <tr> <td style="border: none;">Substation ☐</td> <td style="border: none;">Process Improvement ☐</td> </tr> <tr> <td style="border: none;">Past Expiry Date ☐</td> <td style="border: none;">Manufacturing Process ☐</td> </tr> <tr> <td style="border: none;">Misidentified ☐</td> <td style="border: none;">Past Due ☐</td> </tr> </table>				Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Pressure/Forced ☐</td> <td style="border: none;">Temperature/Cure ☐</td> <td style="border: none;">Power Loss/Surge ☐</td> <td style="border: none;">Positioned Wrong ☐</td> </tr> <tr> <td style="border: none;">Bending ☐</td> <td style="border: none;">Set-up ☐</td> <td style="border: none;">Folio/Program ☐</td> <td style="border: none;">Outside Dimensions ☐</td> </tr> <tr> <td style="border: none;">Centre Not Concentric ☐</td> <td style="border: none;">BOM/Route ☐</td> <td style="border: none;">Grain ☐</td> <td style="border: none;">Over/Under tolerance ☐</td> </tr> <tr> <td style="border: none;">Cracks ☐</td> <td style="border: none;">Broken/Damage/Defect ☐</td> <td style="border: none;">Weld ☐</td> <td style="border: none;">Part Incorrect ☐</td> </tr> <tr> <td style="border: none;">Crimp/Kink/Ripple/Wave ☐</td> <td style="border: none;">Inspection Incomplete/Unqualified ☐</td> <td style="border: none;">Wrong Stock Pulled ☐</td> <td style="border: none;">Part Lost/Missing ☐</td> </tr> <tr> <td style="border: none;">Cuffs ☐</td> <td style="border: none;">Contamination ☐</td> <td style="border: none;">Out of Sequence ☐</td> <td style="border: none;">Part Moved ☐</td> </tr> <tr> <td style="border: none;">Crushing ☐</td> <td style="border: none;">Countersink ☐</td> <td style="border: none;">Off-set ☐</td> <td style="border: none;">Drawing ☐</td> </tr> <tr> <td style="border: none;">Heat Treat ☐</td> <td style="border: none;">Cut Too Short ☐</td> <td style="border: none;">Mislabeled ☐</td> <td style="border: none;">Finish ☐</td> </tr> <tr> <td style="border: none;">Wave/Twist in Tube ☐</td> <td style="border: none;">Instructions Incomplete/Unclear ☐</td> <td style="border: none;">Fit/Function ☐</td> <td style="border: none;">Misread ☐</td> </tr> <tr> <td style="border: none;">Marks/Chatter ☐</td> <td style="border: none;">Drill Holes ☐</td> <td style="border: none;">Misaligned/off center ☐</td> <td style="border: none;">Turning Sequence ☐</td> </tr> </table>						Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
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OTHER :																																																																									

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO.		02195		SHEET 1 OF 4	
	DWG NO.	646.3000	REV: N/C	PREPARED BY	S. HUFF	DATE: 01/05/09
	DWG TITLE:		LOWER CUTTER ASSY			
	APPROVED BY:	ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF:	NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS				

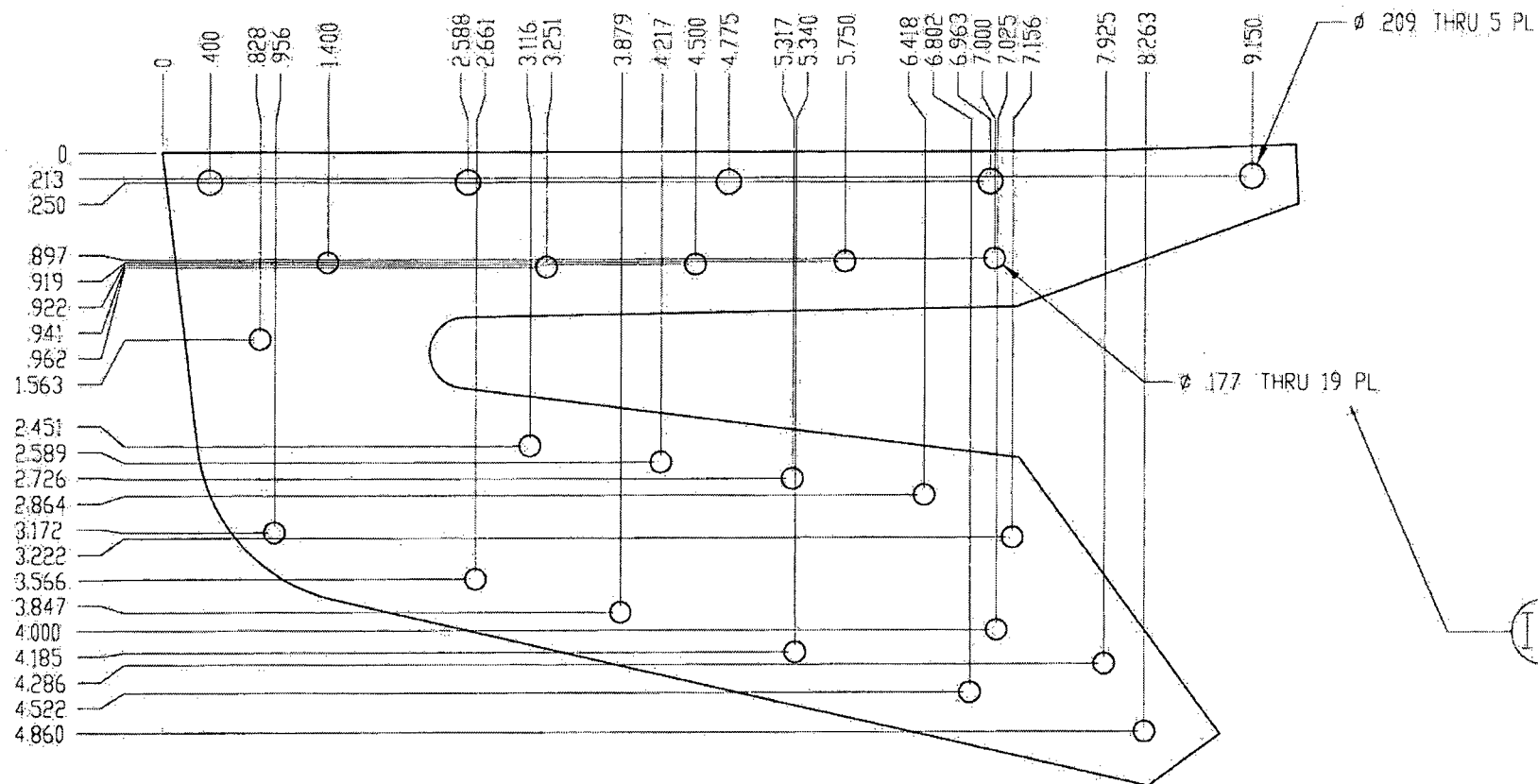
SHEET 1, ZONE D5, IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO APPROVAL
WITHOUT NOTICE
WORK ONLY
NO. 178275 MJS
16-07-04

10	R	601.1541	19	LOCKNUT	MS21042L08
9	R	601.2764	38	WASHER	NAS1149FN832P
8	R	601.2765	19	SCREW	MS27039-0819
7	D	601.2766	2	RIVET	MS20470AD5-18
			.3001		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:				☐ MDL ☒ INSTALL INSTRUC ☒ ICA ☐ FMS ☒ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR
				DER REVIEW REQUIRED ☐ YES ☒ NO	

SHEET 3 IS:

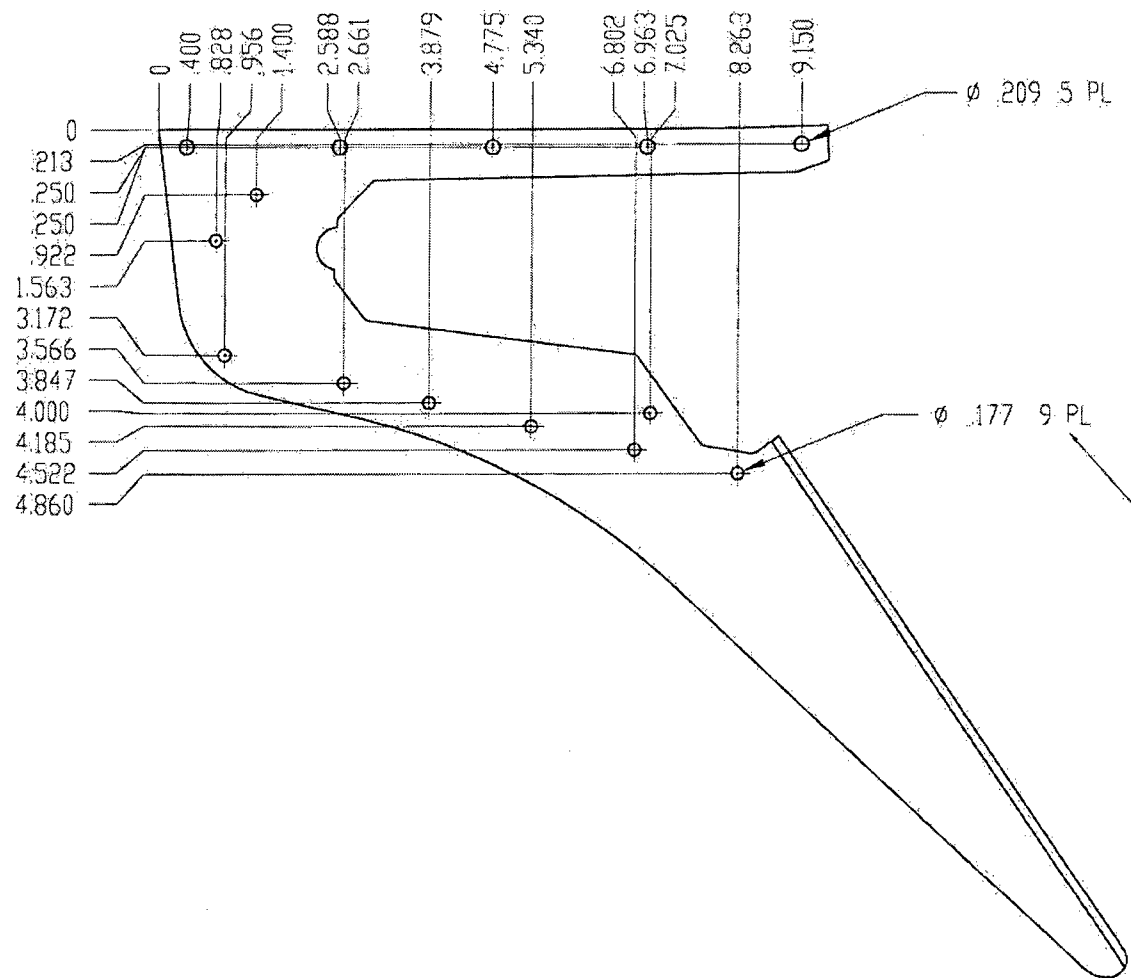


SECTION A-A

2
C7

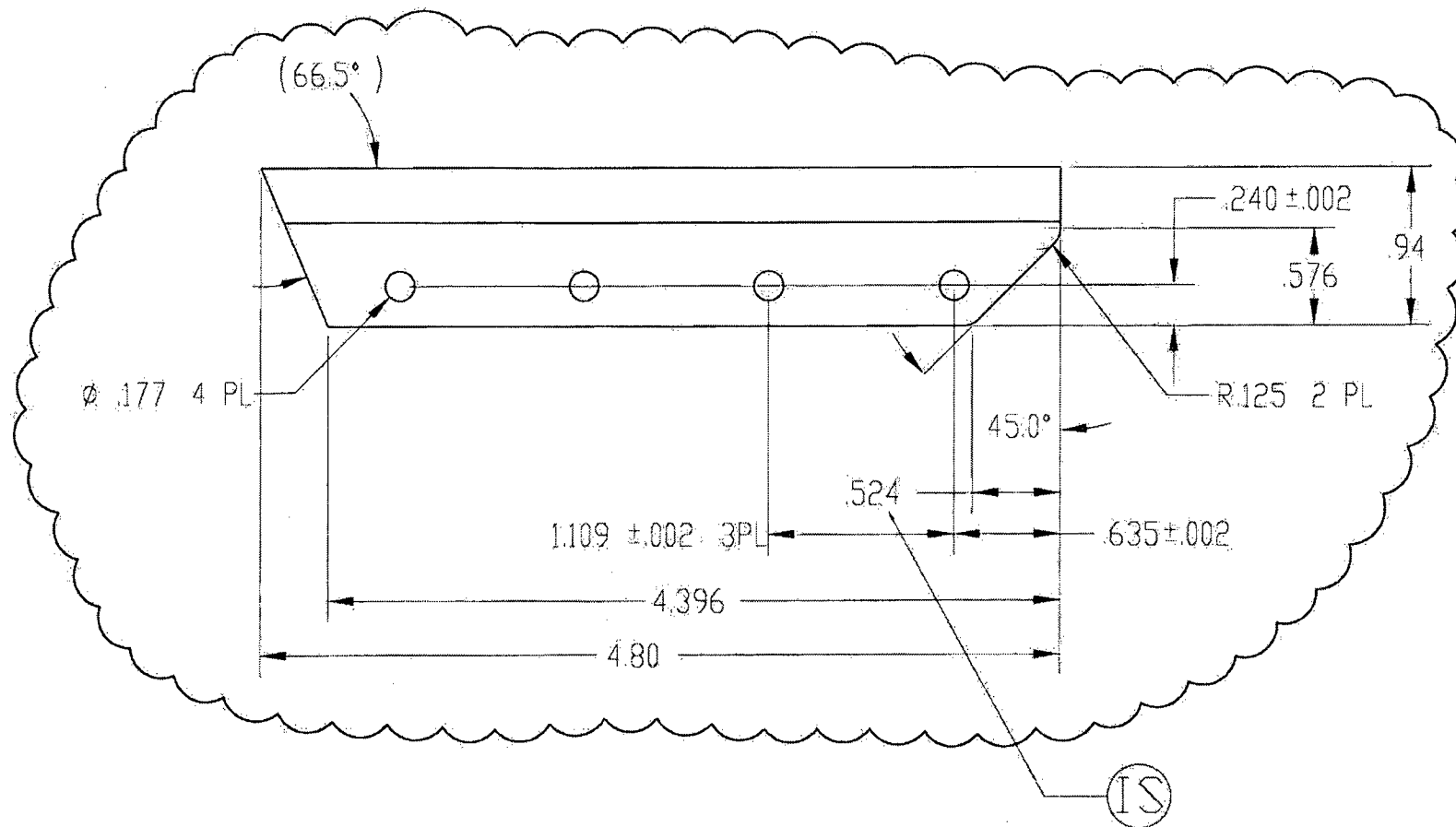
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

SHEET 5 IS:



F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

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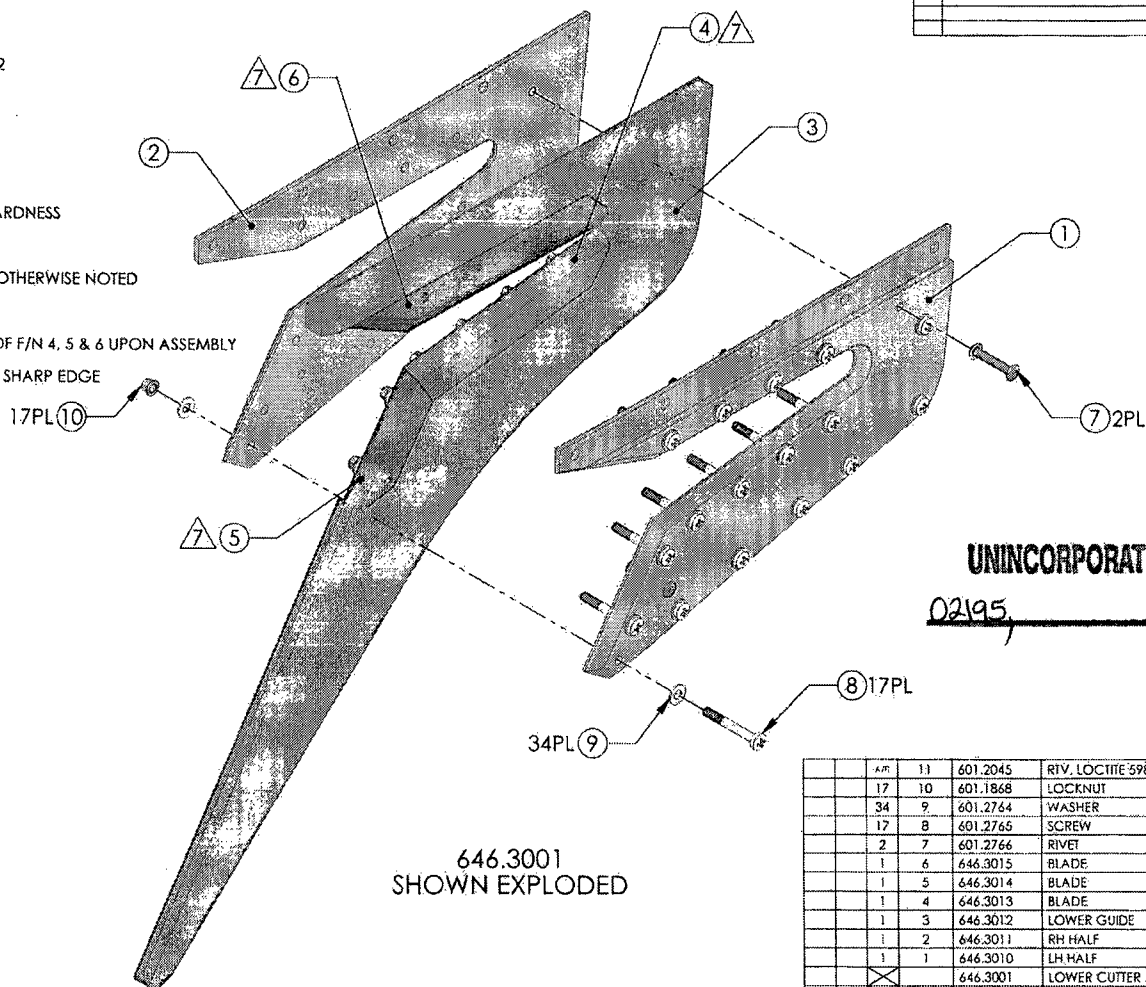


F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 11 AS REQUIRED TO ALL FAYING SURFACES OF F/N 4, 5 & 6 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE



UNINCORPORATED ECN(s)

02195

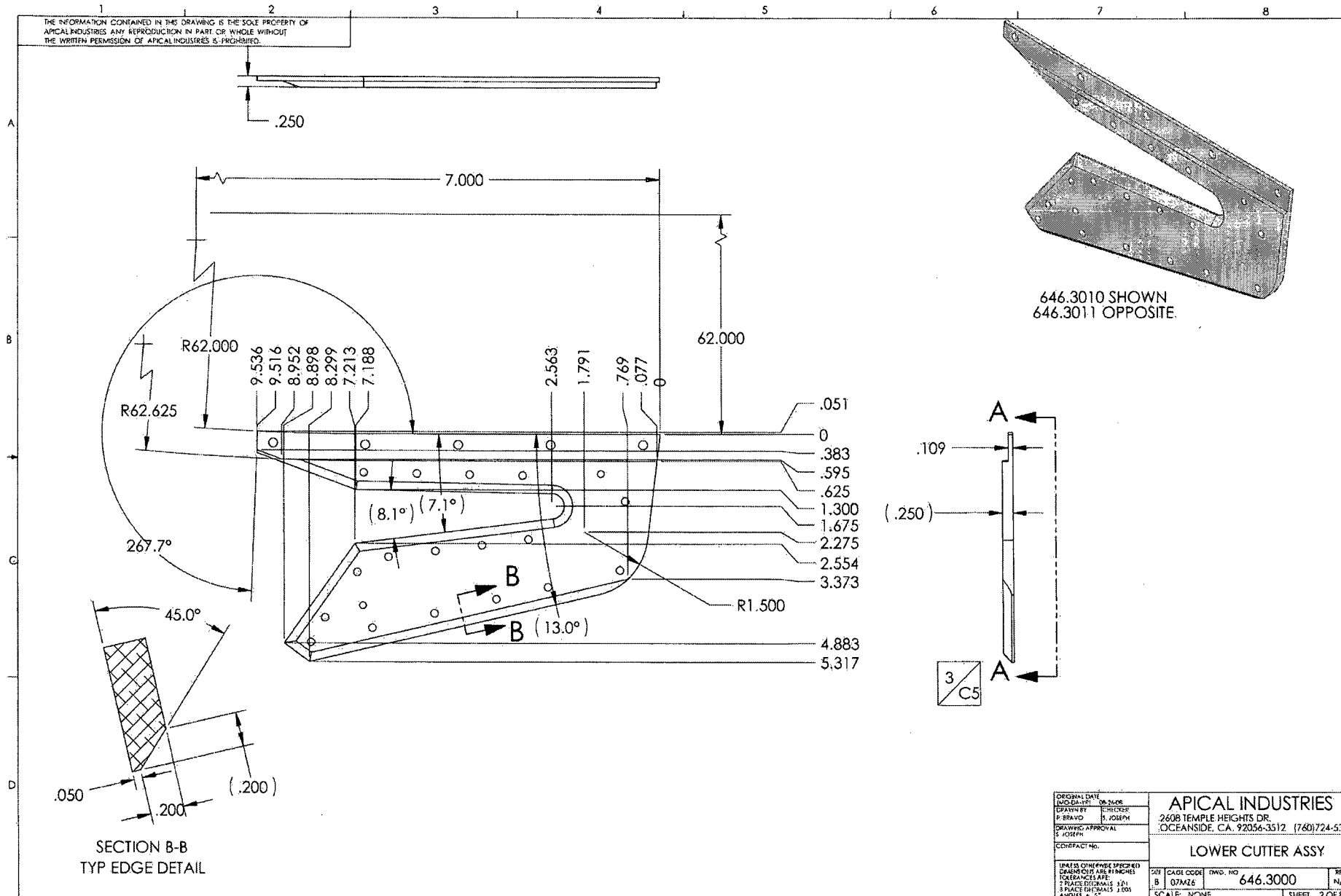
646.3001
SHOWN EXPLODED

QTY	FIND #	PART #	DESCRIPTION	MATL	SPEC.
17	10	601.2045	RIV, LOCITE 598		
34	9	601.1868	LOCKNUT	M21043-08	
12	8	601.2764	WASHER	16A31141F148357P	
2	7	601.2765	SCREW	M127099 0614	
1	6	601.2766	RIVET	1A755040701406-101	
1	5	646.3015	BLADE		
1	4	646.3014	BLADE		
1	3	646.3013	BLADE		
1	2	646.3012	LOWER GUIDE		
1	1	646.3011	RH HALF		
1	1	646.3010	LH HALF		
1	1	646.3001	LOWER CUTTER ASSY		

QTY	646.4000
NEXT ASSY (S)	646.4000
APPROVAL	APPROVAL
CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°	

APICAL INDUSTRIES	
2608 TEMPLE HEIGHTS DR.	
OCEANSIDE, CA. 92056-3512 (760)724-5300	
LOWER CUTTER ASSY	
REV	N/C
SCALE	NONE
SHEET	1 OF 8

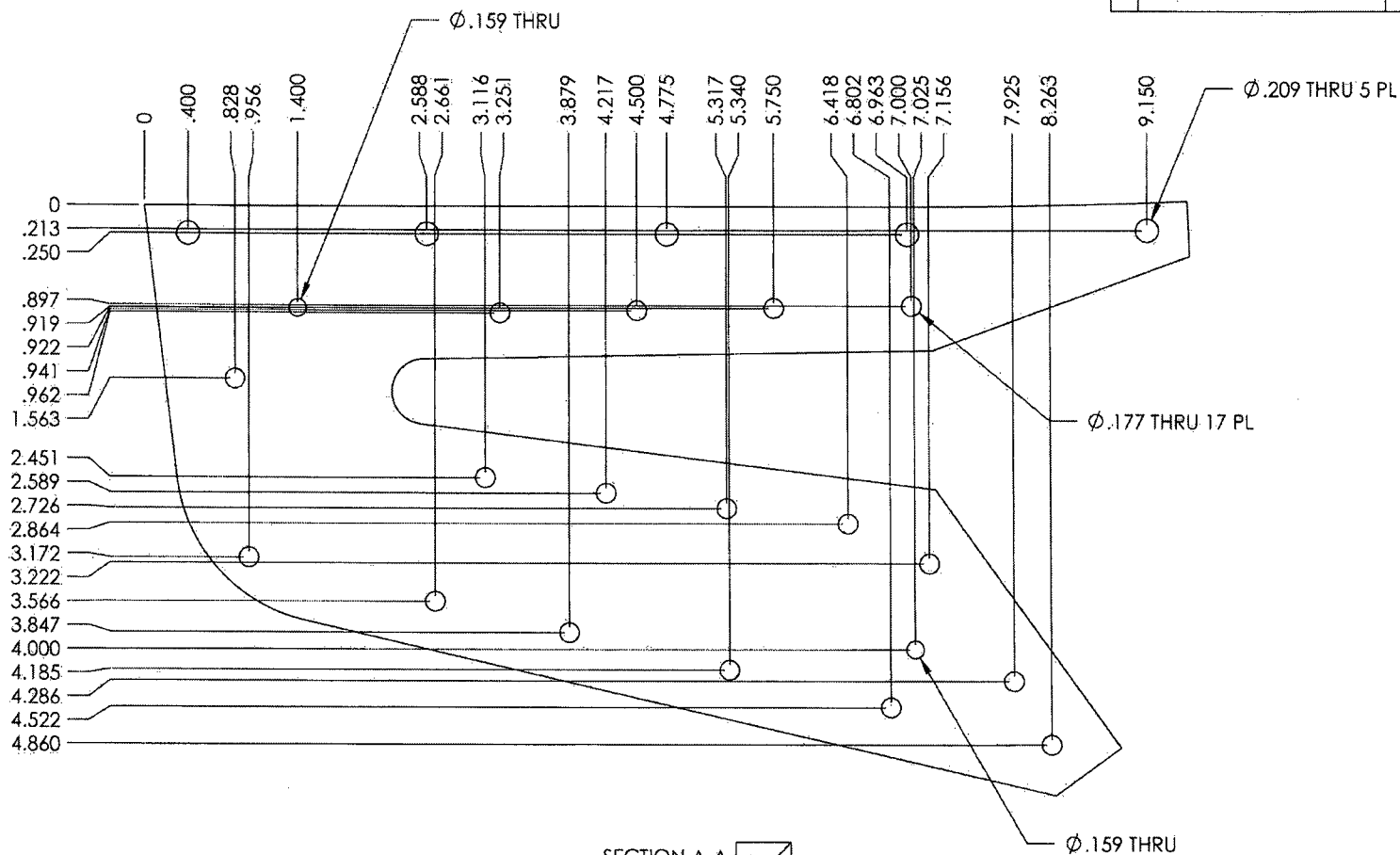
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ORIGINAL DATE UNCLAS-101 DR-2408		APICAL INDUSTRIES	
DRAWN BY P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY S. JOSEPH		LOWER CUTTER ASSY.	
DRAWING APPROVAL S. JOSEPH		CAGE CODE B 07M26	
CONTRACT NO.		DWD. NO. 646.3000	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .001 3 PLACE DECIMALS .0005 ANGLES ± .5°		REV. N/C	
SCALE: NONE		SHEET 2 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



SECTION A-A 2 / C7

ORIGINAL DATE
 10/25/00
 DRAWN BY
 P. B. V. O.
 CHECKED BY
 S. JOSEPH
 DRAWING APPROVAL
 S. JOSEPH
 DATE
 10/25/00

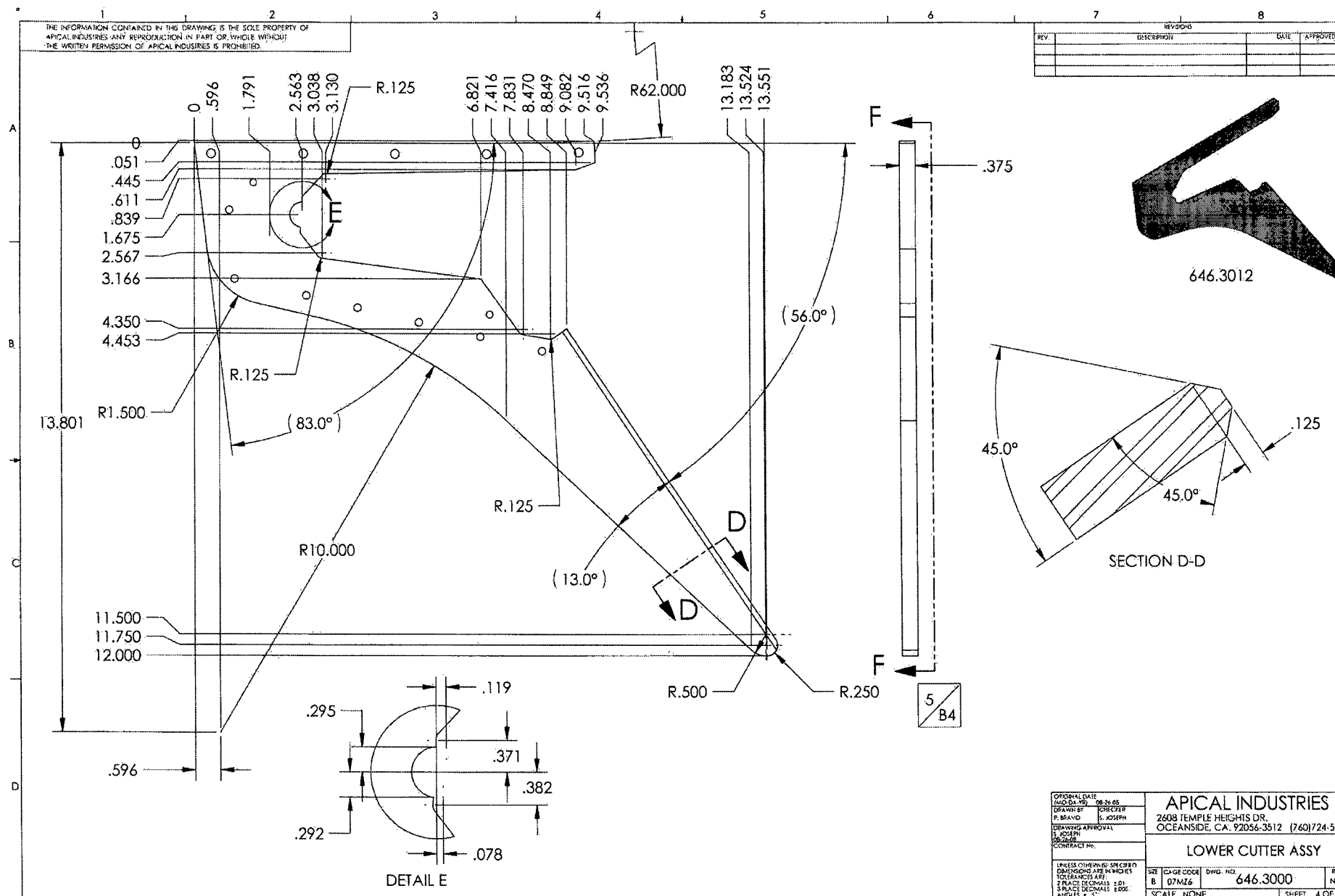
APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760) 724-5300

LOWER CUTTER ASSY

SIZE	CAGE CODE	QTY. NO.	REV.
B	07M16	646.3000	N/C
SCALE NONE			SHEET 3 OF 8

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



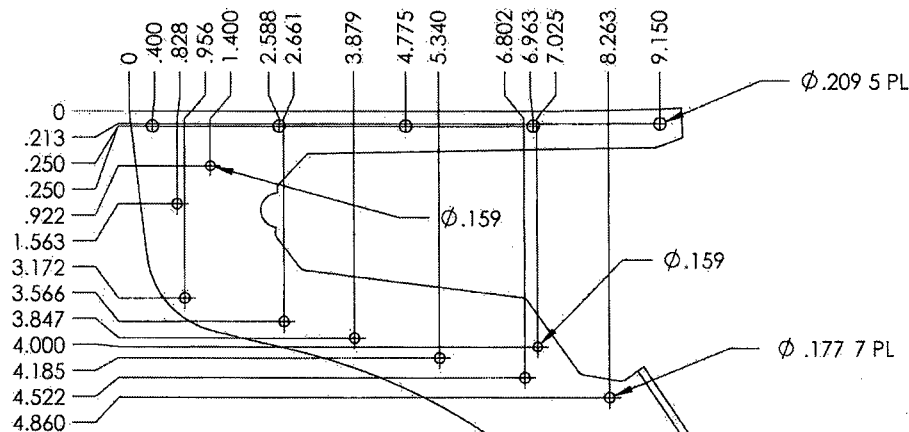
ORIGINAL DATE 1/20/04		08-24-05	
DRAWN BY P. BRAY		CHECKED S. JOSEPH	
DRAWING APPROVAL S. JOSEPH		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B	CA CODE 07M26
DWG. NO. 646.3000		REV N/C	SCALE NONE
SHEET 4 OF 8		SHEET 4 OF 8	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA 92056-3512 (760)724-5300

LOWER CUTTER ASSY

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REV.	DESCRIPTION	DATE	APPROVED

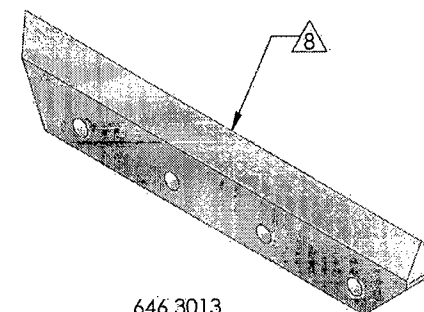
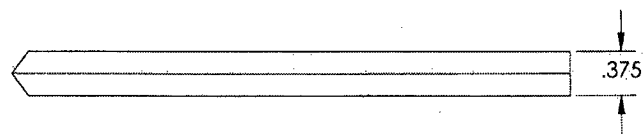


SECTION F-F 4
B6

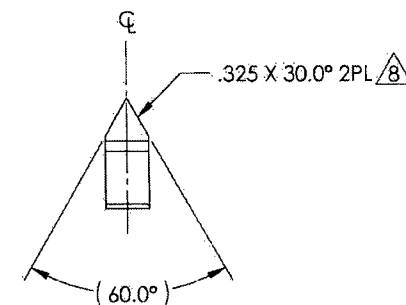
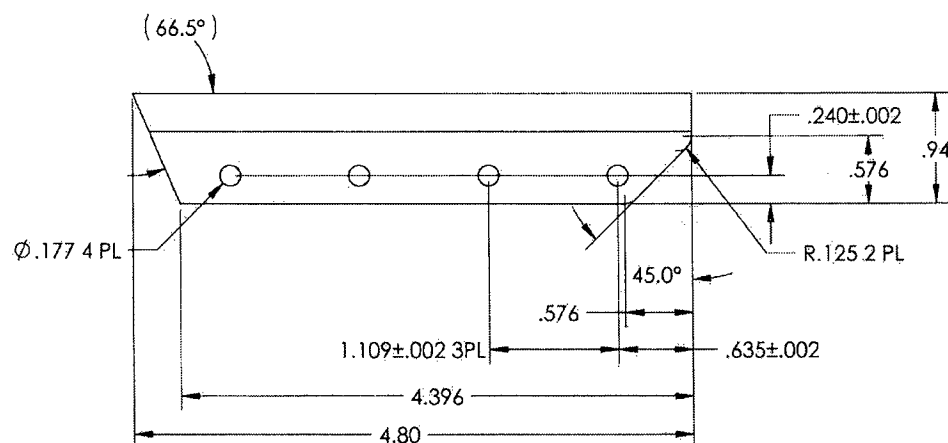
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		REV. B CAGE CODE 07M26 DWG. NO. 646.3000	REV. N/C
SCALE NONE		SHEET 5 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



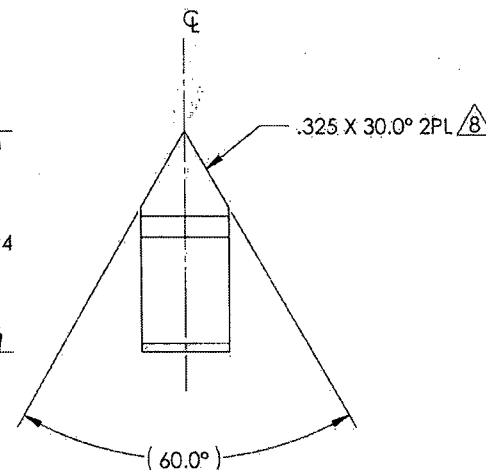
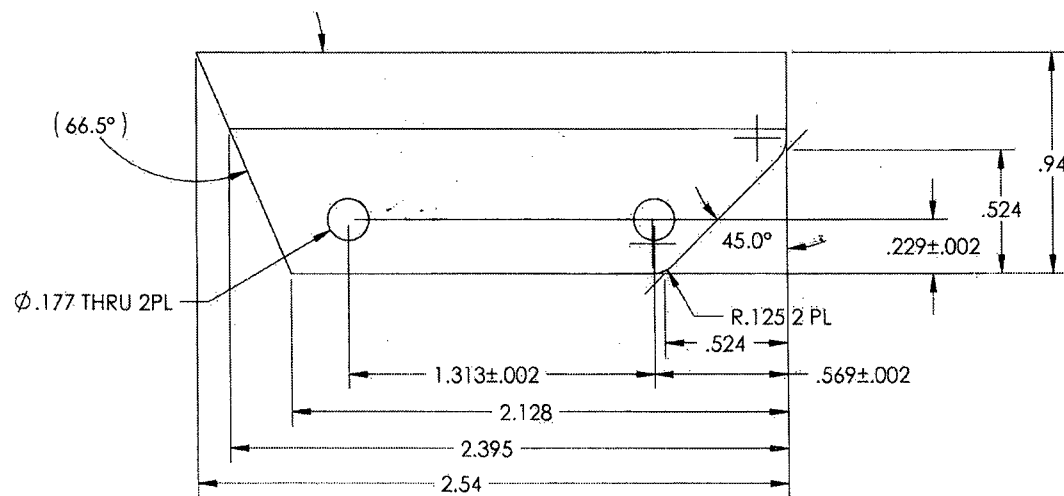
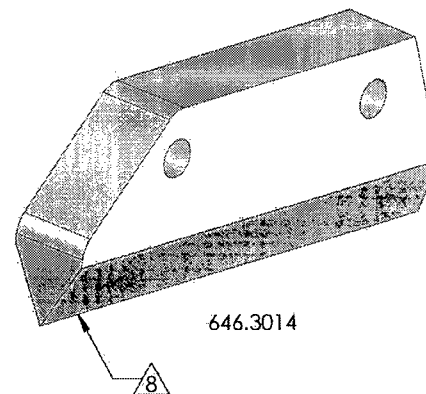
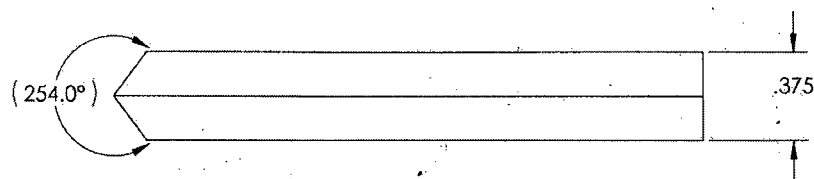
646.3013



ORDERAL DATE (MM/DD/YY) 08/26/08	APICAL INDUSTRIES		
DRAWN BY (NAME) J. BRAYO	CHECKED BY (NAME) J. CALPIN	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-5122 (760)724-5300	
DRAWING APPROVAL (NAME) J. HOFFER (DATE) 08/26/08			
CONTRACT NO.		LOWER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 1. DIMENSIONS ± .015 2. PLACE DECIMALS ± .000			
SFT	CAGE CODE	ITEM NO.	REV.
B	07/016	646.3000	N/C
SCALE NONE			SHEET 6 OF 8

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE
DESIGNED BY
DRAWN BY
P. PAVO
J. JOSEPH
CHECKED
J. JOSEPH
APPROVAL
J. JOSEPH
CONTRACT NO.

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

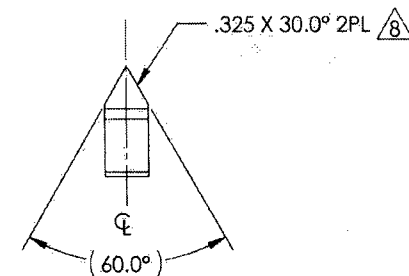
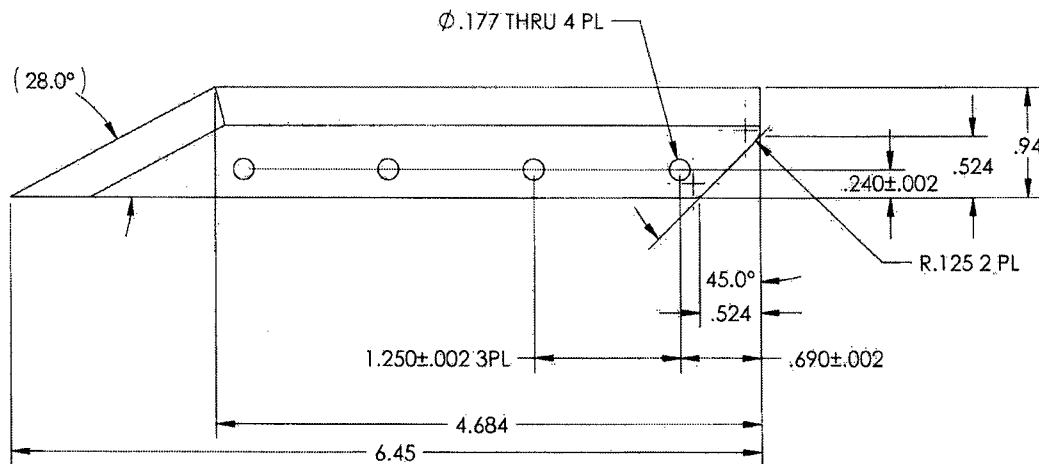
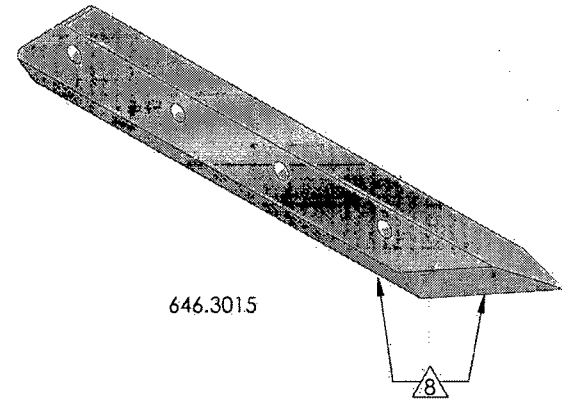
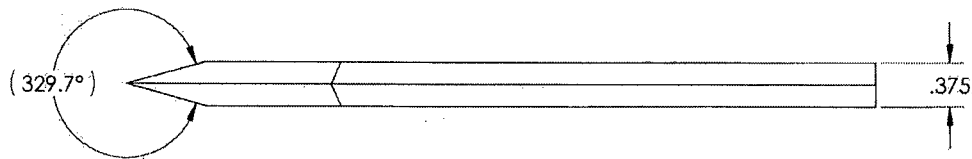
LOWER CUTTER ASSY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE
1. PLACE DECIMALS 1.01
2. PLACE DECIMALS 1.00
ANGLES ± .5°

SHEET	CAGE CODE	QWC. NO.	REV.
B	D7MT6	646.3000	N/C
SCALE NONE		SHEET 7 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE 10/01/99 09:30:00		APICAL INDUSTRIES	
DRAWN BY D. BRAY		2608 TEMPLE HEIGHTS DR.	
CHECKED BY J. JOSEPH		OCEANSIDE, CA 92056-3512 (760)724-5300	
DRAWING APPROVAL J. JOSEPH		LOWER CUTTER ASSY	
CONTRACT NO.		SHEET 8 OF 8	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET 8 OF 8	REV. N/C
SCALE NONE		DWG. NO. 646.3000	REV. N/C



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO33120

Purchase Order Date 7/21/2016

PO Print Date 7/21/2016

Page Number 1 of 4

Order From :

VC-MET004

Ship To : DART AEROSPACE LTD

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 450 473 1884

Buyer

Linda Lacelle

Customer POID

Customer Tax # 10127-2607

Ship To Contact

Terms Net 30

Ship To Phone

Currency CAD

Ship Via:

FedEx Economy collect

FOB

FCA - (Free Carrier)

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	148253	646.3013 BLADE	8/5/2016 No 8/5/2016		10.00	\$3.70	\$37.00
FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS							
PART ARE MADE FROM AISI A2 TOOL STEEL							
PLEASE NOTE: DETAIL C OF C REQUIRED							
Line Total:							\$37.00
2	148275	646.3014 BLADE	8/5/2016 No 8/5/2016		12.00	\$3.70	\$44.40
FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS							
PART ARE MADE FROM AISI A2 TOOL STEEL							
PLEASE NOTE: DETAIL C OF C REQUIRED							

Note:

7/21/2016

Sp/6-8-3

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
312650	1	112865

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
33120		A2	2016/7/22	FEDEX

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
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106 646,3013

(10) 646,3013

(12) 646,3014

(10) 646,3015

(8) 646,3314

(8) 646,3315

(8) 646,3316

(50) 646,9711

Sp/6-7-29

31,14

1 BOITE DE CARTON

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

CERTIFICAT

EMPAQUETAGE Packing	
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QUANTITÉ EXPÉDIÉE / Quantity Shipped : 106

POIDS EXPÉDIÉ / Weight Shipped : 31,14

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 106

POIDS EXPÉDIÉ / Weight Shipped : 31,14

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2016/07/27

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
312650	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
33120	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC	8	59 - 61 HRC	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
106	31,14	646,3013 (10) 646,3013 (12) 646,3014 (10) 646,3015 (8) 646,3314 (8) 646,3315 (8) 646,3316 (50) 646,9711 1 BOITE DE CARTON		

Sp16-7-29

S. AAT

COMMENTAIRES / comments

APPROUVÉ par / Approved by

[Signature]



DATE: 2016-07-27

APPROUVÉ

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL
order

CHARGEMENT
load

312650

1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
33120	N/A	A2		
<u>SPECIFICATIONS DU PROCÉDÉ</u> processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC		8	59 - 61 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
106	31.14	646,3013 (10) 646,3013 (12) 646,3014 (10) 646,3015 (8) 646,3314 (8) 646,3315 (8) 646,3316 (50) 646,9711 1 BOITE DE CARTON

COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR
DOUBLE TEMPER 400F, 2 HRS

Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été fait par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:

Isabel Otero

Isabel Otero

QA Technician



DATE: 2016-07-27